In the Claims:

Please delete claims 2 and 4-7 without prejudice.

Please amend claim 1 and 3 as follows:

1. (Currently amended) A system configured for stimulating tissue internal to a patient's body, said system comprising:

at least one sealed elongate housing having a non-circular cross section and configured for implantation via injection in said patient's body~~;~~, said housing having axial and lateral dimensions selected from the group consisting of:

(a) an axial dimension of less than 60 mm and a lateral dimension of greater than or equal to 6 mm;

(b) an axial dimension of greater than 60 mm and a lateral dimension of less than or equal to 6 mm; and

(c) an axial dimension of less than or equal to 60 mm and a lateral dimension of less than or equal to 6 mm;

power consuming circuitry carried by said housing including at least one electrode extending externally of said housing, said power consuming circuitry including a capacitor and pulse control circuitry for controlling (1) the charging of said capacitor and (2) the discharging of said capacitor to produce a current pulse through said electrode;

a battery disposed in said housing electrically connected to said power consuming circuitry for powering said pulse control circuitry and charging said capacitor, said battery having a capacity of at least one microwatt-hour;

an internal coil and a charging circuit disposed in said housing for supplying a charging current to said battery;

an external coil adapted to be mounted outside of said patient's body; and

means for energizing said external coil to generate an alternating magnetic field for supplying energy to said charging circuit via said internal coil.

2. (Canceled)

3. (Currently amended) The system of claim ~~2~~ 1 wherein said non-circular cross section is selected from the group consisting of:

(a) rectangular;
(b) triangular;
(c) oval;
(d) hexagonal;
(e) octagonal; and
(f) polygon shaped.

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Original) The system of claim 1 wherein said power consuming circuitry further includes:

a controller coupled to said pulse control circuitry and responsive to stored configuration data for defining the characteristics of said current pulse; and

a data signal receiver responsive to a command signal for modifying said stored configuration data.

9. (Original) The system of claim 3 further including a sensor in said housing for detecting a static magnetic field; and wherein

said sensor is coupled to said controller for modifying said current pulse produced in said externally extending electrode.

10. (Original) The system of claim 3 further including a command signal generator; and

wireless communication means for coupling said command signal generator to said data signal receiver.

11. (Original) The system of claim 3 wherein said power consuming circuitry further includes a data signal transmitter for transmitting a data signal.

12. (Original) The system of claim 6 wherein said controller is selectively operable to (1) produce a sequence of drive pulses through said externally extending electrode, (2) monitor an electrical signal from said externally extending electrode, and/or (3) cause said data signal transmitter to transmit a data signal related to said command signal received by said data signal receiver.

13. (Original) The system of claim 6 further including means for causing said transmitter to transmit a data signal related to said command signal received by said data signal receiver.

14. (Original) A system for monitoring and/or affecting at least one parameter of a patient's body, said system comprising:

at least one implantable device operable to sense and/or stimulate a patient's body parameter in accordance with one or more controllable operating parameters; and

a system control unit for controlling said controllable operating parameters, said system control unit comprising:

a sealed elongate housing having a non-circular cross section and suitable for implantation via injection into a patient's body, said housing having axial and lateral dimensions selected from the group consisting of:

(a) an axial dimension of less than 60 mm and a lateral dimension of greater than or equal to 6 mm;

(b) an axial dimension of greater than 60 mm and a lateral dimension of less than or equal to 6 mm; and

(c) an axial dimension of less than or equal to 60 mm and a lateral dimension of less than or equal to 6 mm;

a signal transmitter in said housing for transmitting command signals;

a signal receiver in said housing for receiving status signals; and

a programmable controller in said housing responsive to received status signals for producing command signals for transmission by said signal transmitter to said implantable devices.

15. (Original) The system of claim 14 wherein said non-circular cross section is selected from the group consisting of:

(a) rectangular;
(b) triangular;
(c) oval;
(d) hexagonal;
(e) octagonal; and
(f) polygon shaped.

16. (Original) The system of claim 14 comprising at least one said implantable device operable as a sensor and at least one said implantable device operable as a stimulator and wherein said controller is responsive to status data signals received from said sensor for generating said addressable command data signals to said stimulator to perform closed loop control of the operation of said stimulator.

17. (Original) The system of claim 14 wherein said system control unit additionally comprises a power source contained within said sealed housing for providing operating power to said data signal transmitter, said data signal receiver, and said programmable controller.

18. (Original) The system of claim 14 wherein said system control unit additionally includes:

at least one electrode;
sensor/stimulator circuitry; and wherein
said sensor stimulator circuitry is configurable to generate a data signal representative of an electrical signal conducted by said electrode and/or supply a sequence of drive pulses to said electrode.

19. (Original) The system of claim 14 wherein each of said implantable devices includes a power source having a capacity of at least 1 microwatt-hour.

20. (Original) The system of claim 19 wherein each said implantable device includes means for monitoring status of its power source and said system control unit is configured to transmit command signals to each said implantable device and to responsively receive status signals corresponding to said power source status.

21. (Original) The system of claim 14 further including:

program storage means in said housing for specifying the operation of said programmable controller; and

means to modify said program storage means in response to signals received by said signal receiver.

22. (Original) The system of claim 21 wherein said program storage means includes means to cause said system control unit to transmit a programmable list of command signals to said implantable devices.

23. (Original) The system of claim 22 wherein said means to cause said system control unit to transmit a programmable list of command signals includes:

a magnetic sensor for generating a signal responsive to a DC magnetic field; and wherein

said programmable list of command signals is transmitted in response to said magnetic sensor signal.

24. (Original) A system control unit configured for controlling and monitoring the operation of one or more other implantable addressable controllable devices wherein each of said controllable devices is contained within a sealed elongate housing suitable for injection into a patient's body and having a non-circular cross section selected from the group consisting of: (a) an axial dimension of less than 60 mm and a lateral dimension of greater than or equal to 6 mm, (b) an axial dimension of greater than 60 mm and a lateral dimension of less than or equal to 6 mm, and (c) an axial dimension of less than or equal to 60 mm and a lateral dimension of less than or equal to 6 mm, and wherein at least one of said devices is configurable to modify at least one parameter of the patient's body, said system control unit comprising:

a control unit housing;

a data signal transmitter for wireless transmission of command data signals to selectively addressed controllable devices;

a data signal receiver for wireless reception of status data signals from selectively addressed controllable devices;

a controller capable of accepting status data signals from said data signal receiver and sending addressable command data signals to said data signal transmitter in response thereto to selectively control or monitor the operation of one or more of said selectively addressed controllable devices in a closed loop manner in accordance with one or more controllable operating parameters for modifying at least one parameter of the patient's body;

program storage for specifying the operation of said controller; and

wherein said data signal transmitter, data signal receiver, said controller, and said program storage are disposed within said control unit housing.

25. (Original) The system control unit of claim 24 wherein said control unit housing is sealed and suitable for implantation via injection into a patient's body and has axial and lateral dimensions selected from the group consisting of:

(a) an axial dimension of less than 60 mm and a lateral dimension of greater than or equal to 6 mm;

(b) an axial dimension of greater than 60 mm and a lateral dimension of less than or equal to 6 mm; and

(c) an axial dimension of less than or equal to 60 mm and a lateral dimension of less than or equal to 6 mm.

26. (Original) The system control unit of claim 24 additionally comprising a power source contained within said control unit housing for providing operating power to said data signal transmitter, said data signal receiver, said controller, and said program storage.

27. (Original) The system control unit of claim 24 wherein said program storage is modified in response to signals received by said data signal receiver.

28. (Original) The system control unit of claim 24 additionally including:

at least one electrode;

sensor circuitry; and wherein

said sensor circuitry is configurable to generate a data signal representative of an electrical signal conducted by said electrode.

29. (Original) The system control unit of claim 24 additionally including:

at least one electrode;

stimulator circuitry; and wherein

said stimulator circuitry is configurable to supply a sequence of drives pulses to said at least one electrode.

30. (Original) The system control unit of claim 29 wherein said supplied sequence of drive pulses is altered in response to a status signal received from at least one of said implantable addressable controllable devices.

31. (Original) The system control unit of claim 24 wherein at least one of said implantable addressable controllable devices operates as a stimulator and includes at least one electrode and stimulator circuitry for delivering a sequence of drive pulses to said at least one electrode and said system control unit periodically transmits a command signal to said stimulator in response to a status signal received from another one of said implantable addressable controllable devices.

32. (Original) The system control unit of claim 24 additionally comprising a rechargeable battery for powering said system control unit.

33. (Original) The system control unit of claim 32 wherein said battery has a capacity of at least one watt hour.

34. (Original) The system control unit of claim 24 wherein each of said implantable addressable controllable devices includes a rechargeable battery for powering each said implantable addressable controllable device.

35. (Original) The system control unit of claim 34 wherein said battery for each of said implantable addressable devices has a capacity of at least one microwatt-hour.

36. (Original) The system control unit of claim 24 wherein said system control unit is configured for implantation in the patient's body.

37. (Original) The system control unit of claim 24 wherein said system control unit is configured for use outside of the patient's body.

38. (Original) A system control unit configured for controlling and monitoring the operation of one or more other implantable addressable controllable devices wherein each of said controllable devices is contained within a sealed elongate housing suitable for injection into a patient's body and having a non-circular cross section selected from the group consisting of: (a) an axial dimension of less than 60 mm and a lateral dimension of greater than or equal to 6 mm, (b) an axial dimension of greater than 60 mm and a lateral dimension of less than or equal to 6 mm, and (c) an axial dimension of less than or equal to 60 mm and a lateral dimension of less than or equal to 6 mm, and wherein at least one of said devices is configurable as a stimulator to modify at least one parameter of the patient's body and at least one of said devices is configurable as a sensor to sense at least one parameter of the patient's body, said system control unit comprising:

a control unit housing;

a data signal transmitter for wireless transmission of command data signals to selectively addressed controllable devices;

a data signal receiver for wireless reception of status data signals from selectively addressed controllable devices;

a controller capable of accepting status data signals from said data signal receiver from one or more of said selectively addressed controllable devices operating as sensors and sending addressable command data signals to said data signal transmitter in response thereto to selectively control the operation of one or more of said selectively addressed controllable devices operating as stimulators to thereby operate in a closed loop manner for modifying at least one parameter of the patient's body;

program storage for specifying the operation of said controller; and wherein

said data signal transmitter, data signal receiver, said controller, and said program storage are disposed within said control unit housing.

39. (Original) The system control unit of claim 38 wherein said system control unit is configured for implantation in the patient's body.

40. (Original) The system control unit of claim 38 wherein said system control unit is configured for use outside of the patient's body.

41. (Original) A system for monitoring and/or affecting at least one parameter of a patient's body comprised of a system control unit capable of wireless communication with one or more implantable devices suitable for implantation within the patient's body, wherein each of said implantable devices is contained with a sealed elongate housing having a non-circular cross section and includes a power source having a power capacity of at least 1 microwatt-hour, said housing having an axial and lateral dimensions selected from the group consisting of:

(a) an axial dimension of less than 60 mm and a lateral dimension of greater than or equal to 6 mm;

(b) an axial dimension of greater than 60 mm and a lateral dimension of less than or equal to 6 mm; and

(c) an axial dimension of less than or equal to 60 mm and a lateral dimension of less than or equal to 6 mm.

42. (Original) A device suitable for implantation via injection beneath the skin of a patient's body, said device comprising:

a sealed elongate housing having an axial dimension of less than 60 mm and a lateral dimension of less than 6 mm;

power consuming circuitry carried by said housing having at least one electrode extending externally of said housing for tissue stimulation and/or body parameter monitoring, wherein said power consuming circuitry includes communication circuitry for accepting remotely provided command messages to thereby modify operation of said device;

a battery disposed in said housing electrically connected to said power consuming circuitry for powering said circuitry; and wherein

said battery has an energy capacity of at least 1 microwatt-hour.

43. (Original) The device of claim 42 wherein said power source comprises a battery including:

a case;

a first conductive plate mounted in said case;

a second conductive plate mounted in said case in opposed spaced relationship relative to said first plate;

an electrolyte disposed between said first and second plates; and wherein

said plates are formed to include gaps to accordingly minimize eddy currents therein.

44. (Original) The device of claim 42 wherein said battery is rechargeable, said device further comprising an internal coil and a charging circuit disposed in said housing for supplying a charging current to said rechargeable battery in response to an externally provided AC magnetic field.

45. (Original) The device of claim 42 wherein said battery is a primary battery.

46. (Original) The device of claim 42 wherein said power consuming circuitry includes:

a controller;

address storage means for storing an identification address;

input/output driver circuitry coupled to said at least one electrode; and wherein

said communication circuitry includes a data signal receiver for receiving a command message identifying said stored address for selectively actuating said input/output driver circuitry.

47. (Original) The device of claim 46 wherein said data signal receiver includes a coil responsive to a command message defined by a modulated magnetic field.

48. (Original) The device of claim 46 wherein said data signal receiver includes a transducer responsive to a command message defined by a modulated ultrasonic signal.

49. (Original) The device of claim 46 wherein said communication circuitry further includes a data signal transmitter for remotely transmitting a data signal and thereby providing a bidirectional communication capability with an external device.

50. (Original) The device of claim 46 wherein said input/output driver circuitry coupled to at least one electrode is configured to produce an electrical current for stimulating tissue; and wherein

said controller supplies a sequence of drive pulses to said electrode when said input/output driver circuitry is actuated.

51. (Original) The device of claim 50 further including:

a sensor coupled to said controller responsive to a static magnetic field; and wherein

said controller is configured to modify the function of said device in response to a static magnetic field detected by said sensor.

52. (Original) The device of claim 49 wherein said device is configurable via a command data signal identifying said stored address to selectively operate to (1) supply a sequence of drive pulses to said at least one electrode via said input/output driver circuitry, and/or (2) monitor an electrical signal from said at least one electrode via said input/output driver circuitry.